

***** **ENFORCEMENT CONFIDENTIAL** *****

Site: Gulfco Marine Maintenance

Location: 906 Marlin Ave, Freeport, Brazoria Co., TX

CERCLIS ID No: TXD055144539

Quad Map: Freeport, TX

Lat: 28° 58' 00.65" N

Long: 95° 17' 22.76" W



HRS Score: 50 (surface water migration pathway only)

1. PRPs

a. Owner/Operators:

- i. Gulfco Marine Maintenance, Inc. (aka Gulfco, Inc.) - owned from 1971 to 1979
- ii. Chromalloy American Corporation (Gulfco merged into Chromalloy effective 11/03/75)
- iii. Sequa Corporation (Chromalloy's parent corp.)
- iv. Fish Engineering & Construction, Inc.- purchased site 11/12/1979 & sold entire site except Lot 56 to Hercules on 1/20/89; KTI purchased Fish Engineering and formed KTI Fish; KTI Fish sold Lot 56 to Jack Palmer and Ron Hudson sometime in 1999.
- v. Hercules Offshore Corporation - purchased site from Fish Engr on 1/20/89 except Lot 56; Hercules declared bankruptcy in 5/4/1998 & left site as described in the LT Report
- vi. Parker Drilling Offshore Corporation
- vii. **LDL Coastal, Inc.** (current owner of Lots 21 - 25, 55, 57, & 58) - purchased site through bankruptcy court on 8/2/1999
- viii. **Jack Palmer & Ron Hudson** (current owners Lot 56)

b. Generators:

- i. Dow

2. Site Operations

- a. Clean and repair barges since the early 1970s
- b. Barge cleaning and offshore platform construction (Fish Engr.)
- c. Barge cleaning and refurbishing only (Hercules)
- d. Barges contained:
 - i. crude oil
 - ii. chlorinated solvents
 - iii. alcohol
 - iv. ketones

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- v. hydrochloric acids
- vi. fertilizers
- e. LDL was cleaning up site in 2001 for future lease to a new tenant (SSI Report)

3. Setting:

- a. Lots 21 through 25 are approximately 4 acre parcels - primary facility - total about 20 acres
- b. Lots 55, 57, and 58 are 5 acre parcels total about 15 acres (excluding Lot 56)
- c. Located within 100 year coastal flood with velocity (wave action) area
- d. North bank of Intracoastal Waterway between Oyster Creek on east and the Old Brazos River channel and the Dow Barge Canal on the west - 2170 feet of frontage along waterway.
- e. Offshore Oil Services, Inc., located adjacent to Gulfco on the east (provides diesel fuel, drilling mud, chemical additives, and cement to offshore drilling rigs).
- f. Ground Water samples GW-06 and GW-09 between Gulfco impoundments and Offshore Oil Services found no migration from offshore Oil Services (no migration? Not ND?)
- g. Dow chemical is located in excess of 1 mile west-southwest of Gulfco
- h. No contaminant sources south of Gulfco across the Intracoastal Waterway and upwind of the prevailing wind direction.
- i. Contamination therefore results from on-site activities and not the result of deposition from off-site.
- j. Soils/Hydro-geology:
 - i. South of Marlin Ave (Surfside Clay):
 - 1. Water table @ 2' during winter
 - 2. Saline clay to 72" bgs;
 - ii. North of Marlin Ave:
 - 1. Water table @ 20" through most of year;
 - 2. Saline clay to 65" bgs;
 - iii. Chicot Aquifer:
 - 1. About 1300' thick along the coast;
 - 2. Divided into an upper and lower unit by a clay layer;
 - 3. Upper Chicot from surface to a depth ranging from 100' to 300' bgs;
 - 4. Wells yield up to 2,500 gpm in Brazoria County;
 - iv. Evangeline Aquifer:
 - 1. Underlays the Chicot Aquifer;
 - 2. About 2,200' thick along the coast;
 - 3. Fresh water found only in the upper part of the Evangeline, about 415' maximum
 - 4. Geologically similar and hydrologically connected to the Chicot Aquifer.

4. Release/Potential Source Areas:

- a. Soil staining throughout the main facility found during ECM assessments - no petroleum hydrocarbons reported in samples - staining may be black sandblasting material
- b. **AST Tank Farm** - total (12) product ASTs and (4) wash water ASTs
 - i. Used to store barge wash water after impoundments deactivated on 10/16/81
 - ii. Tank farm on the East side of site - (6) aboveground storage tanks (AST) contained 110,350 gals of barge wash water; LT suggested disposal at a permitted WW treatment facility- only (1) AST remains at the location, a second one was washed to near the office complex during a flood.
 - iii. (1) AST requires additional characterization to verify reactivity result;
 - iv. (1) AST has 2,300 gals chloroform which LT suggested can be recycled
 - v. (7) AST containing 38,508 gals water that did not exceed TCLP & LT suggested it can be treated and discharged
 - vi. (2) areas adjacent to tank farm w/ TPH in excess of TNRCC risk based screening levels (LT Site Characterization Report, 6/1999)
 - vii. Storm water within AST farm berms and inactive ASTs - LT suggests treating properly and discharging.
 - viii. No levees or containment dykes in 1989 during EPA site visit
 - ix. Currently has a concrete berm
- c. Quonset Hut:
 - i. Contains numerous containers of various products
 - ii. Containers may become a source if not removed
- d. Maintenance Building:
- e. **Dry Dock Yard Slip Area:**
 - i. Solid waste trash & debris adjacent to dry dock - LT suggests disposal as solid waste
 - ii. Contains sandblasting dust & black sandblasting material - material analysis found possible elevated **beryllium**
 - iii. Second area id'd by ECM in 1998 & sampled from the north side of Martin Ave found possible elevated **beryllium on Lot 57**
- f. **Fresh Water Ponds:**
 - i. LTE aerial photo survey concluded ponds were man-made between 1977 and 1987.
 - ii. Large pond (Lot 55): area about 48,000 SF; depth unknown; no COCs above regulatory limits in water & sediment samples (LT Report)
 - iii. Small pond (Lot 55 and vacant lot to the east of site): area about 10,000 SF; about 6" to 8" deep; no COCs above regulatory limits in water & sediment samples (LT Report)
 - iv. LTE collected one surface water sample from each pond and analyzed for VOCs; both samples were ND.
- g. **Former Surface Impoundments**
 - i. (3) closed impoundments located in Lot 56,
 - 1. Began operating in 1971

2. Earthen ponds with a natural clay liner
 3. stored wash waters (consisting of organic and inorganic wash waters) from barge cleaning
 4. barges contained waste oils, caustics, and organic chemicals
 5. Impoundment 1: 0.34 ac (156' by 96')
 6. Impoundment 2: 1.5 ac (330' by 197')
 7. Impoundment 3: 0.32 ac (145' by 96')
 8. Impoundments deactivated on 10/16/1981
 9. Closed and covered by 8/18/1982 letter
 10. Closure consisted of:
 - (a) Removal of liquids
 - (b) Removal of most of sludge
 - (c) Solidifying remaining sludge w/ soil (100 CY solidified sludge left in place)
 - (d) Cap w/ 3' clay cover
 - (e) Installed "hard wearing surface" over clay cover
- ii. Fish Engr installed (4) monitoring wells around impoundments during closure of impoundments
1. Screening between 38 - 48'
 2. Sampled wells (4) times between 7/82 & 9/82
 - (a) Benzene to 8,180 ppb
 - (b) Phenol to 1,092 ppb
 3. Wells plugged 12/1983
- iii. Hercules installed (3) monitoring wells near impoundments in 1/1989
1. 18 foot wells
 2. Found detectable (?) VOCs & pesticides
 3. Wells not seen in 1/2000 SSI sampling event
- iv. LTE installed (2) temp monitoring wells on west side of Lot 55
1. 8' deep
 2. Installed in 1999
 3. Located between former impoundments & larger fresh water pond
 4. No VOCs detected
- v. Soil samples in Lot 56 south of former impoundments
1. Collected in 1/2000 during SSI
 2. No VOCs found (BUT, 0-6" & composite - not good for VOCs)
 3. Metals above background
- h. **Drum Storage Area:**
- i. (42) 55-gal drums containing solids that exceed TCLP for VOCs (LT Report) - waste sludge with chlorinated solvents
 - ii. (61) 55-gal drums containing solids that can be disposed of as solid waste (LT Report)
 - iii. All drums had been removed from site at the time of the SSI sampling event.

- i. Vacant Lots:
- j. **Former Wash Water Storage Areas:**
 - i. Floating barges used to store barge wash water after impoundments deactivated on 10/16/1981
- k. Site additional investigations (LT Report):
 - i. Surface soil: no metals or VOC impact above TNRCC screens
 - ii. Subsurface soil: no metals or VOC impact above TNRCC screens
 - iii. Surface water: no metals or VOC impact above TNRCC screens
 - iv. Ground water: no metals or VOC impact above TNRCC screens
- l. Lot 56: Hercules did not purchase Lot 56 from Fish Engr due to potential environmental impacts from the three surface ponds

SOIL/SEDIMENT SAMPLES

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Sandblasting Area near dry dock	LTE 2/22/99	Black sandblasting material		Be - 0.14	2,200	150	
	B-1 (SCR)	0-6"		As - 6.05	1.8	0.39	3.1 - 4.9
				Ba - 112	79,000	5500	
				Cr - 34	500	210	
				Pb - 130	1,400	400	
				Hg - 0.16	340	23	
	SO-01 (SSI)	0-6" composite sample	VOCs, pest,	Phenanthrene - 0.25 J	na	na	
				Fluoranthene - 0.58 J	24,000	2,300	
				Pyrene - 0.46 J	32,000	2,300	
				Benzo(a)anthracene - 0.29 J	2.3	0.62	
				Chrysene - 0.40 J	230	62	
				bis(2-ethylhexyl)phthalate - 2.6 J	140	35	
				Benzo(b)fluoranthene - 0.38 J	2.3	0.62	
				Benzo(k)fluoranthene - 0.033 J	23.0	6.2	
				Benzo(a)pyrene - 0.36 J	0.23	.062	
				Indeno(1,2,3-cd)pyrene - 0.36 J	2.3	0.62	
				Benzo(g,h,i)perylene - 0.45 J	na	na	
				Al - 4350	100,000	76,000	
				As - 1.9	1.8	0.39	3.1 - 4.9
				Ba - 269	79,000	5500	
				Cr - 13.5	500	210	
				Pb - 17.3	1,400	400	
				Mn - 85.6 J	35,000	3,200	

LOCATION	SAMPLE	DEPTH	ND	DETECTS	SCREENING		Back Ground
				(mg/kg)	7,900	550	
				Zn - 368	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Sandblasting Area near quonset shop	B-2 (SCR)	0-6"		As - 1.57	1.8	0.39	3.1 - 4.9
				Ba - 390	79,000	5500	
				Cr - 14.9	500	210	
				Pb - 43.3	1,400	400	
		3'		As - 1.75	1.8	0.39	3.1 - 4.9
				Ba - 429	79,000	5500	
				Cr - 15.0	500	210	
				Pb - 46.8	1,400	400	
	SO-02 (SSI)	0-6" composite	pest	methylene chloride - .006 J	22	8.9	0.006 in 1 of 3 BG samples
				bis(2-ethylhexyl)phthalate - 0.4	140	35	0.046 in 1 of 3 BG samples
				Al - 9090	100,000	76,000	
				As - 1.5	1.8	0.39	3.1 - 4.9
				Ba - 271	79,000	5500	
				Cr - 14.9	500	210	
				Pb - 11.9	1,400	400	
				Mn - 90.3 J	35,000	3,200	
				V - 15.9	7,900	550	
				Zn - 1150	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Fresh Water Pond Area	SS-5 (sediment) (SCR)	0-6"	TPH, rest of full VOC suite	As - 1.84			
				Ba - 67.1			
				Cr - 7.14			
				Pb - 5.92			
				Toluene- .0027			
	SS-6 (sediment) (SCR)	0-6"	TPH, full VOC suite	As - 1.91			
				Ba - 55.7			
				Cr - 6.49			
				Pb - 6.68			
	B-7 (SCR)	3'	TPH, full VOC suite	na			
	B-8 (SCR)	3'	TPH, full VOC suite	na			

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Adjacent to Former Surface Impoundments	SO-07 (SSI)	0 - 6"	pest	methylene chloride - .008 J	22	8.9	0.006 in 1 of 3 BG samples
				bis(2-ethylhexyl)phthalate - 0.084 J	140	35	0.046 in 1 of 3 BG samples
				Al - 26,600	100,000	76,000	
				As - 6.3	1.8	0.39	3.1 - 4.9
				Ba - 247	79,000	5500	
				Cr - 27.6 J	500	210	
				Pb - 22.7	1,400	400	
				Mn - 962	35,000	3,200	
				V - 41	7,900	550	
				Zn - 86.2 J	100,000	23,000	
	SO-08 (SSI)	0 - 6"	pest	methylene chloride - .005 J	22	8.9	0.006 in 1 of 3 BG samples
				bis(2-ethylhexyl)phthalate - 0.060 J	140	35	0.046 in 1 of 3 BG samples
				Al - 6,520	100,000	76,000	
				As - 2.1	1.8	0.39	3.1 - 4.9
				Ba - 105	79,000	5500	
				Cr - 17.1 J	500	210	
				Pb - 46.4 J	1,400	400	
				Mn - 168	35,000	3,200	
				V - 13	7,900	550	
				Zn - 92.9 J	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
AST Farm Area & Former Drum Storage Area	B-9 (SCR)	not reported					
	B-10 (SCR)	3'	full SVOC suite, rest of full VOC suite	TPH - 792	TX-310		
				EB-.0066	230	230	
				IPB-.0026	580	370	
				N-.0611	210	120	
				1,2,4-TMB-.0022	190	52	
				Xylene-.0077	210	210	
	B-11 (SCR)	not reported					
	SS-8 (SCR)	0-6"	full VOC suite	TPH - 200			
	SO-03 (SSI)	0-6" (former drum storage area)		methylene chloride - 0.017	22	8.9	0.006 in 1 of 3 BG samples
				Fluoranthene - 0.073 J	24,000	2,300	
				Pyrene -0.071 J	32,000	2,300	
				Chrysene - 0.043 J	230	62	
				bis(2-ethylhexyl)phthalate-0.061 J	140	35	0.046 in 1 of 3 BG samples
				Benzo(b)fluoranthene -.049 J	2.3	0.62	
				Indeno(1,2,3-cd)pyrene -.063 J	2.3	0.62	
				Benzo(g,h,i)perylene -.079 J	na	na	
				Dieldrin -0.0062	0.12	0.03	
				Aroclor 1254 - 0.034 J	0.83	0.22	
				Al - 10,900	100,000	76,000	
				As -3.8	1.8	0.39	3.1 - 4.9
				Ba - 266	79,000	5500	
				Cr - 14.8	500	210	
				Pb - 18.5	1,400	400	
				Mn - 265 J	35,000	3,200	
				V - 18.2	7,900	550	
				Zn - 124	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
AST Farm Area & Former Drum Storage Area (Cont)	SO-05 (SSI)	0" - 6"	SVOC	methylene chloride -0.025 J	22	8.9	0.006 in 1 of 3 BG samples
				4,4'-DDE - 0.004 J	7.8	1.7	
				endrin - 0.004 J	210	18	
				Al - 7,870	100,000	76,000	
				As -3.6	1.8	0.39	3.1 - 4.9
				Ba - 371	79,000	5500	
				Cr - 24 J	500	210	
				Pb - 65.7 J	1,400	400	
				Mn - 292	35,000	3,200	
				V - 15.7	7,900	550	
				Zn - 416	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Maintenance Buildings	B-12 (SCR)	not reported					
	B-13 (SCR)	not reported					
	B-14 (SCR)	3'	full VOC suite	na			

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Electrical Building	SS-7 (SCR)	0-6"	PCB	na			

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Former Wash Water AST	B-5 SCR	3'	rest of full VOC suite	TPH - 61.1			
				1,2-DCA - .002	0.84	0.35	
				IPB - .0074	580	370	
	B-6 SCR	not reported					
	SO-04 SSI	0" - 6"		methylene chloride -0.013	22	8.9	0.006 in 1 of 3 BG samples
				bis(2-ethylhexyl)phthalate -0.22 J	140	35	0.046 in 1 of 3 BG samples
				dieldrin - 0.015 J	0.12	0.03	
				4,4'-DDE - 0.0089 J	7.8	1.7	
				4,4'-DDD - 0.0064 J	11	2.4	
				4,4'-DDT - 0.015 J	7.8	1.7	
				endrin ketone - 0.013 J	na	na	
				endrin aldehyde - 0.018 J	na	na	
				alpha-chlordane - 0.0084	na	na	
				gamma-chlordane - 0.02	na	na	
				Aroclor-1254 - 0.15	0.83	0.22	
				Al - 6,900	100,000	76,000	
				As - 2.6	1.8	0.39	3.1 - 4.9
				Ba - 1,510	79,000	5500	
				Cr - 18.7	500	210	
				Pb - 79	1,400	400	
				Mn - 207 J	35,000	3,200	
				V - 14.6	7,900	550	
				Zn - 580	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
NE Quadrant Area	B-3 SCR	3'	rest of full VOC suite	TPH - 23.8			
				1,2-DCA - .0024	0.84	0.35	
	B-4 SCR	3'	full VOC suite	TPH - 11.7			

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Block 57	SS-4 SCR	0-6"		As - 2.19	1.8	0.39	3.1 - 4.9
				Ba - 95.4	79,000	5500	
				Cr - 8.76	500	210	
				Pb - 48.6	1,400	400	
Block 58	SS-3 SCR	0-6"		As - 1.99	1.8	0.39	3.1 - 4.9
				Ba - 133	79,000	5500	
				Cr - 5.17	500	210	
				Pb - 54.3	1,400	400	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Lot 57/58 From area bare of vegetation; north of Marlin Ave; no record on former usage of this area	SO-06 SSI	0-6"		methylene chloride - 0.006 J	22	8.9	0.006 in 1 of 3 BG samples
				Phenanthrene - 2.5	na	na	
				Fluoranthene - 5.1	24,000	2,300	
				Pyrene - 4.4	32,000	2,300	
				Benzo(a)anthracene - 2.4	2.3	0.62	
				Chrysene - 2.8	230	62	
				Benzo(b)fluoranthene - 2.7	2.3	0.62	
				Benzo(k)fluoranthene - 2.5	23	6.2	
				Benzo(a)pyrene - 2.6	0.23	0.062	
				Indeno(1,2,3-cd)pyrene - 2.2	2.3	0.62	
				Benzo(g,h,i)perylene - 2.4 J	na	na	
				dieldrin - 0.099 J	0.12	0.03	
				4,4'-DDE - 0.005 J	7.8	1.7	
				4,4'-DDD - 0.0079 J	11	2.4	
				4,4'-DDT - 0.0074 J	7.8	1.7	
				Aroclor-1254 - 0.07	0.83	0.22	
				Al - 2,360	100,000	76,000	
				As - 2.7	1.8	0.39	3.1 - 4.9
				Ba - 159	79,000	5500	
				Cr - 21.6 J	500	210	
				Pb - 221 J	1,400	400	
				Mn - 194	35,000	3,200	
				V - 6.6	7,900	550	
				Zn - 431 J	100,000	23,000	

LOCATION	SAMPLE	DEPTH	ND	DETECTS (mg/kg)	SCREENING		Back Ground
					IND	RES	
Barge Slip 1	SE - 08	0-6" sediment		phenanthrene- 1.20			ND (0.49)
				fluoranthene - 2.0			ND (0.49)
				pyrene - 2.0			ND (0.49)
				bis(2-ethylhexyl)phthalate - 1.2			0.15 J (0.460 DL)
				gamma-chlordane - 0.0055			ND (0.0026)
				Aroclor 1254 - 0.027 J			ND (0.05)
				Pb - 46.8			12.6
				Zn - 314			54.4
Barge Slip 2	SE- 09	0-6" sediment		phenanthrene- 0.350 J			ND (0.49)
				fluoranthene- 0.60 J			ND (0.49)
				pyrene - 0.64 J			ND (0.49)
				bis(2-ethylhexyl)phthalate - 0.24 J			0.15 J (0.460 DL)
				heptachlor epoxide - 0.0038			ND (0.0026)
				Aroclor 1254 - 0.023 J			ND (0.05)
				Pb - 27.9			12.6
				Zn - 130			54.4
East of Barge Slip 2	SE - 10	0-6" sediment		bis(2-ethylhexyl)phthalate - 0.11 J			0.15 J
				Pb - 21.8			12.6
				Zn - 220			54.4
	SE - 11	0-6" sediment		bis(2-ethylhexyl)phthalate - 0.55 J			0.15 J (0.460 DL)
				Pb - 32.8			12.6
				Zn - 37.8			54.4

GROUND WATER DATA

LOCATION	DATE	DEPTH	ND	DETECTS	MCL/Tap Water	Back Ground
				mg/L		
4 monitoring wells for closure of impoundments	July-Sept 1982	38' - 48'		benzene - to 8.18	0.005	
				phenols - to 1.092	11.0	
MW1, S of Marlin Ave.	3/16/99 SCR	TD from 15' to 20'	full VOC suite	Al - 0.246 J	37 (tap)	nd (0.1)
				Mn - 7.93 J	1.7 (tap)	0.015
				Ni - 0.0022	0.100	nd (0.020)
MW2, S of Marlin Ave.			full VOC suite	Al - 16.2	37 (tap)	nd (0.1)
				Be - 0.0012	0.004	nd (0.002)
				Cr - 0.0146	0.100	nd (0.002)
				Pb - 0.0146	0.015	nd (0.002)
				Mn - 2.93 J	1.7 (tap)	0.015
				Ni - 0.0253	0.100	nd (0.020)
				V - 0.0356	0.260	nd (0.030)
				Zn - 0.0258	11	0.056
MW3, S of Marlin Ave.			full VOC suite	Al - 77.0	37 (tap)	nd (0.1)
				Be - 0.006	0.004	nd (0.002)
				Cr - 0.0854	0.100	nd (0.002)
				Co - 0.0722	na	nd (0.020)
				Pb - 0.0945	0.015	nd (0.002)
				Mn - 5.14 J	1.7 (tap)	0.015
				Ni - 0.155	0.100	nd (0.020)
				V - 0.142	0.260	nd (0.030)
				Zn - 0.279	11	0.056
GW4	3/18/99 SCR			full VOC suite		
GW5	"		rest of full VOC suite	acetone - 0.256	0.61 (Tap)	

LOCATION	DATE	DEPTH	ND	DETECTS	MCL/Tap Water	Back Ground
GW6	"		full VOC suite	As - 0.01	0.01 (MCL)	
				Ba - 0.067	2	
				Cr - 0.014		
GW7	"		full VOC suite	none		
GW8	"	8'	full VOC suite	none		
GW9	"	8'	full VOC suite	none		

LOCATION	DATE	DEPTH	ND	DETECTS	MCL/Tap Water	Back Ground
				mg/L		
GW-01	1/25/01	10 - 20'		As - 0.0777	0.010	0.0091 - 0.0102
				Co - 0.0669	na	0.0174
				Pb - 0.0947	0.015	0.0244
				Mn - 8.46	1.7	1.36 - 2.81
				Ni - 0.217	0.100	0.0108 - 0.0468
				V - 0.196	0.260	0.0161 - 0.0649
GW-02	"	14 - 24'		As - 0.0102	0.010	0.0091 - 0.0102
				Pb - 0.0203	0.015	0.0244
				Mn - 2.01	1.7	1.36 - 2.81
				Ni - 0.0309	0.100	0.0108 - 0.0468
				V - 0.0537	0.260	0.0161 - 0.0649
GW-03	"	14 - 24'		As - 0.0426	0.010	0.0091 - 0.0102
				Mn - 14.1	1.7	1.36 - 2.81
				Ni - 0.0172	0.100	0.0108 - 0.0468
				V - 0.0144	0.260	0.0161 - 0.0649
GW-04	"	10 - 20'		As - 0.0706	0.010	0.0091 - 0.0102
				Co - 0.0606	na	0.0174
				Pb - 0.0864	0.015	0.0244
				Mn - 8.66	1.7	1.36 - 2.81
				Ni - 0.216	0.100	0.0108 - 0.0468
				V - 0.178	0.260	0.0161 - 0.0649

BACKGROUND GROUND WATER SAMPLES (OFF-SITE)

LOCATION	DATE	DEPTH	ND	DETECTS	MCL/Tap Water	Back Ground
				mg/L		
GW-01 Blue Water Courts	1/26/00		all VOCs; Remaining SVOCs; all pest/PCB; remaining metals	bis(2-ethylhexyl)phthalate - 0.0212		
				An - 0.0038	0.006	
				As - 0.0142	0.010	
				Ba - 0.446	2.0	
				Mg - 17.3	na	
				Mn - 0.012	1.7	
				Se - 0.0043	0.050	
				Zn - 0.028	11.0	
GW-02 Blue Water Courts (dup of GW-01)	"		all VOCs; all SVOCs; remaining pest/PCB; remaining metals	lindane - 0.000005	0.0002	
				As - 0.0142	0.010	
				Ba - 0.447	2.0	
				Mg - 17.2	na	
				Mn - 0.013	1.7	
				Se - 0.0047	0.050	
				Zn - 0.026	11.0	

LOCATION	DATE	DEPTH	ND	DETECTS	MCL/Tap Water	Back Ground
				mg/L		
GW-03 Dow Chem	1/26/00		remaining VOCs; remaining SVOCs; all pest/PCB; remaining metals	chloroform - 0.0231		
				bromodichloromethane - 0.0225		
				dibromochloromethane - 0.0175		
				bromoform - 0.0054		
				bis(2-chloroisopropyl)ether-0.0034		
				As - 0.0061	0.010	
				Ba - 0.303	2.0	
				Mg - 15.2	na	
				Mn - 0.015	1.7	
				Se - 0.0035	0.050	
				Zn - 0.056	11.0	
GW-04	1/26/00		all VOCs; all SVOCs; all pest/PCB; remaining metals	As - 0.0139	0.010	
				Ba - 0.434	2.0	
				Mg - 20.4	na	
				Mn - 0.030	1.7	
				Se - 0.0046	0.050	
				Zn - 0.108	11.0	
GW-05	1/26/00		all VOCs; all SVOCs; all pest/PCB; remaining metals	As - 0.0053	0.010	
				Ba - 0.285	2.0	
				Mg - 21.9	na	
				Mn - 0.020	1.7	
				Se - 0.0055	0.050	
GW-06	1/26/00		all VOCs; all SVOCs; all pest/PCB; remaining metals	As - 0.0239	0.010	
				Ba - 0.370	2.0	
				Mg - 25.0	na	
				Mn - 0.037	1.7	
				Se - 0.0059	0.050	

5. Contaminates:

- a. Ground water - no priority pollutants above regulatory standards in 3 existing monitoring wells (ECM sampling)

6. Migration Pathways

- a. Migration routes
 - i. Ground water:
 - 1. flow to the southeast
 - ii. Surface water:
 - 1. Ground surface is generally level
 - 2. Southern part apparently drains to south into Intracoastal Waterway
 - 3. North of Marlin Ave apparently drains into adjacent wetlands, then (about 0.48 miles away) to Oyster Bayou; and/or drains to the south to a drainage ditch north of Marlin Ave - the ditch then flows into the Intracoastal Waterway near the Hwy 332 bridge over the Intracoastal.
- b. Fate and transport

7. Potential Receptors:

- a. Intracoastal Waterway
 - i. **As per the HRS system, if chemical with a bio-accumulation potential of 500 or greater is present in sediment at a level that meets the criteria for an observed release, then the watershed is considered to be subject to actual human food chain contamination.** Sediment samples SE-08 and SE-10 meet the criteria for an observed release & have chemicals with bio-accumulation factors of 500 or greater (fluoranthene; pyrene; bis(2-ethylhexyl)phthalate; gamma-chlordane; lead; and zinc).
 - ii. Intracoastal Waterway is considered a fishery.
- b. Wetlands
 - i. The nearest wetland is 500' south of Gulfco across the Intracoastal Waterway (what about area north of Gulfco?)
- c. Water supply wells
 - i. closest water supply well was at the public marina on the west adjacent property - was used until 1984; well was 199' deep with a water table at 63'
 - ii. (2) City of Surfside Beach wells:
 - 1. @ 118 Sword Fish, Surfside, TX.
 - 2. TNRCC #s 0200037G (west well) and 0222237H
 - 3. 0.92 miles southeast of site near Hwy 332 bridge over Intracoastal Waterway;
 - 4. TNRCC inspection report says each is 300' deep, but system operator says west well is 250' deep.
 - iii. City of Surfside Beach public water system (TNRCC ID No. 0200037) has (8) wells located within 2 miles of Gulfco; the wells are completed between 250' and 500'; the system serves 734 persons.
 - iv. SSI Report did not evaluate the drinking water threat because of a lack of targets.
- d. Surface water intakes
 - i. City of Freeport gets water from reservoirs 15 miles north of site

- e. Ecological receptors
 - i. Endangered or threatened species

8. Preliminary Remediation Levels (PRGs)

- a. ARARs:

9. Risk management/Remediation

- a. Risk evaluation:
- b. Interim measures:
- c. Source control:
- d. Remediation actions:
- e. Performance monitoring provisions/locations:
- f. Contingency plans if monitoring criteria are exceeded:

- LONG LIST OF 104(c) TO POTENTIAL GENERATORS/TRANSPORTERS
- * - GENERAL NOTICE LETTER TO DOW (RPM'S DO)
W/ ANY FOLLOWUP QUESTIONS.
- * - CHANGE DATE IN CERCLES

END OF 2ND QTR → 3/31/03 → NEEDED TO WAIT
ON NEXT ROUND
OF 104(c) LETTERS

JANICE

RESPONSE FROM PARKER DRILLING → NAMED NAMES
* 104(c) LETTERS TO TRANSPORTERS/GENERATORS

DIXIE CARRIERS

BASF

DIXIE LINERHALL

TPT TRANSPORTATION

LEE VAC

SAMEDAN

- PLAINTIFF/DEF/JURISDICTION/DATE - YEAR?
ON CASELLS SVIT